

INTERNATIONAL SEARCH REPORT

International Application No.
PCT/EP2004/014359

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K31/198 A61K31/225 A61K31/185 A61K31/385 A61K31/07
A61K31/375 A61K31/355 A61P13/12 A61P39/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS, MEDLINE, EMBASE, SCISEARCH, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 794 124 A (YAMAMOTO ET AL) 27 December 1988 (1988-12-27) column 2, lines 25-54 column 3, lines 1-14 column 6, lines 11-16	1,3,6,8, 9
X	US 4 849 452 A (DULCE ET AL) 18 July 1989 (1989-07-18) column 2, lines 24-44 column 2, line 60 - column 3, line 11 claims	1,3,6
	----- -/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *8* document member of the same patent family

Date of the actual completion of the international search

2 May 2005

Date of mailing of the international search report

11/05/2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Cielen, E

INTERNATIONAL SEARCH REPORT

 International Application No
 PCT/EP2004/014359

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 93/14750 A (THE ROCKEFELLER UNIVERSITY; ALTEON INC) 5 August 1993 (1993-08-05) page 5, line 11 - page 6, line 6 page 6, lines 29-32 page 7, lines 10-20 page 17, lines 6-22 claims 1,7,15,17,31 -----	1,6
X	US 5 607 974 A (DROEGE ET AL) 4 March 1997 (1997-03-04) column 1, lines 51-60 column 2, lines 11-40 column 2, lines 52-67 column 3, lines 14-19 -----	1-3,6-9
X	US 4 792 549 A (TAKAHASHI ET AL) 20 December 1988 (1988-12-20) column 1, lines 5-11 column 2, lines 58-67 examples 1,2,4-6 claims 1,2 -----	1,5,6
X	WO 02/34303 A (NITROMED, INC; TRUSTEES OF BOSTON UNIVERSITY; LOSCALZO, JOSEPH; VITA,) 2 May 2002 (2002-05-02) -----	1,6
A	page 1, lines 9-17 page 14, line 23 - page 15, line 8 page 21, lines 4-13 page 22, lines 18-22 page 30, lines 18-23 claims 1-4,14,17,23-25,27,44,45,47,49-51 -----	8,9
X	US 2002/137785 A1 (KINDNESS GEORGE ET AL) 26 September 2002 (2002-09-26) -----	1,5,6
A	page 1, paragraphs 2,4,8 pages 1-2, paragraph 15 page 2, paragraph 18 page 4, paragraph 34 page 5, paragraph 42 pages 5-6, paragraphs 44,45 claims 1,29 -----	8
X	US 6 060 446 A (ZALOGA ET AL) 9 May 2000 (2000-05-09) column 1, line 61 - column 2, line 2 column 2, lines 26-31 column 4, lines 32-40 column 5, lines 30-38 column 5, line 55 - column 6, line 59 claims 1,2,6 ----- -/--	1,5,6

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/EP2004/014359

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE WPI 6 September 1991 (1991-09-06), Derwent Publications Ltd., London, GB; Class 914, page 2, AN 1991-306713 XP002326744 FUNATO TOSHIKI ET AL.: "Oral amino acid preparation for cardiac failure" & JP 03 204814 A (OTSUKA SEIYAKU KOGYO KK) 6 September 1991 (1991-09-06) abstract</p>	1, 3, 6, 8
X	<p>DE 34 14 491 A1 (DIETL, HANS, DR) 24 October 1985 (1985-10-24) claims 1, 3, 5, 6 page 3, lines 1-32 page 4, line 12 - page 5, line 25 page 6, lines 26-30</p>	1, 2, 4, 6
X	<p>DATABASE WPI 23 August 1990 (1990-08-23), Derwent Publications Ltd., London, GB; Class 904, page 0, AN 1990-301258 XP002326745 ITO TADA0: "Hepatopathy inhibitor" & JP 02 212424 A (TOTOSHU SEIZO KK) 23 August 1990 (1990-08-23) abstract</p>	6
A		5
X	<p>MOBERLY JAMES B ET AL: "Elevation of whole-body glutathione in peritoneal dialysis patients by L-2-Oxothiazolidine-4-carboxylate, a cysteine prodrug (Procysteine)" JOURNAL OF THE AMERICAN SOCIETY OF NEPHROLOGY, vol. 9, no. 6, June 1998 (1998-06), pages 1093-1099, XP008046078 ISSN: 1046-6673 abstract page 1093, column 2, paragraph 2 page 1094, column 1, paragraph 2 page 1095, column 2, paragraph 2 page 1097, column 2, paragraph 3 - page 1098, column 1, paragraph 2</p>	1-3, 7
Y	<p>US 6 627 659 B1 (SANTANGELO FRANCESCO) 30 September 2003 (2003-09-30) column 1, lines 39-49 claims 1, 2, 7-9, 12, 14-16, 19, 21</p>	1-5, 7, 9

-/--

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP2004/014359

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 00/53176 A (UNI-CI S.R.L; DALL'AGLIO, ROBERTO; BORGONOVO, MARGHERITA; INTROINI, CA) 14 September 2000 (2000-09-14) page 1, lines 3-15 page 1, line 26 - page 2, line 1 page 2, lines 22-34 page 5, line 33 - page 6, line 20 page 7, lines 6-12 claims 1,3,4,7	1-5,7,9
A	----- WO 00/44375 A (MARS UK LIMITED; HARPER, E., JEAN) 3 August 2000 (2000-08-03) page 1, lines 15-21 page 3, lines 11-15 page 6, lines 1,2 page 6, lines 27-30 page 7, lines 16-19 page 8, line 24 - page 9, line 11 page 10, line 24 - page 11, line 14 page 13, lines 6-14 page 16, lines 20-27 claims 7,9-11,14,15,27,32	5
A	----- EP 0 958 816 A (ASTA MEDICA AKTIENGESELLSCHAFT) 24 November 1999 (1999-11-24) page 2, paragraph 1 page 3, paragraph 11 pages 6-7, paragraphs 26,27 page 7, paragraph 31	5
A	----- BOSTOM A G ET AL: "LACK OF EFFECT OF ORAL N-ACETYLCYSTEINE ON THE ACUTE DIALYSIS-RELATED LOWERING OF TOTAL PLASMA HOMOCYSTEINE IN HEMODIALYSIS PATIENTS" ATHEROSCLEROSIS, AMSTERDAM, NL, vol. 120, no. 1-2, 1996, pages 241-244, XP000991283 ISSN: 0021-9150 abstract page 242, column 1, paragraph 2 - column 2, paragraph 1 page 243, column 1, paragraphs 3,4 page 243, column 2, paragraph 2	1,2,7
A	----- M. H. BEERS; R. BERKOW: "The Merck Manual of Diagnosis and Therapy, Seventeenth Edition" 1999, MERCK RESEARCH LABORATORIES, WHITEHOUSE STATION N.J., XP002326823 page 1841 - page 1848	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2004/014359

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claims 7-9 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/014359

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4794124	A	27-12-1988	JP 1892897 C	26-12-1994
			JP 6010132 B	09-02-1994
			JP 62126125 A	08-06-1987
			DE 3643119 A1	23-06-1988
			FR 2608428 A1	24-06-1988
			GB 2198942 A , B	29-06-1988
US 4849452	A	18-07-1989	DE 3445253 A1	26-06-1986
			CA 1263603 A1	05-12-1989
			CH 665773 A5	15-06-1988
			JP 1049328 B	24-10-1989
			JP 1588652 C	19-11-1990
			JP 61140522 A	27-06-1986
WO 9314750	A	05-08-1993	US 5334617 A	02-08-1994
			CA 2128248 A1	05-08-1993
			EP 0624088 A1	17-11-1994
			JP 7503713 T	20-04-1995
			WO 9314750 A2	05-08-1993
			US 5468777 A	21-11-1995
			US 5801200 A	01-09-1998
			US 5733933 A	31-03-1998
			US 5733524 A	31-03-1998
US 5607974	A	04-03-1997	AU 639686 B2	05-08-1993
			AU 4969490 A	24-08-1990
			BE 1004168 A3	06-10-1992
			CA 1339070 C	29-07-1997
			CA 1339256 C	12-08-1997
			CA 2045180 A1	27-07-1990
			CH 683499 A5	31-03-1994
			DE 4090165 T	21-11-1991
			DK 139191 A	25-07-1991
			FR 2643557 A1	31-08-1990
			GB 2243296 A , B	30-10-1991
			GR 90100048 A	07-06-1991
			IE 62795 B1	08-03-1995
			IL 93162 A	15-03-1995
			IT 1237999 B	21-06-1993
			JP 4504570 T	13-08-1992
			KR 9402820 B1	04-04-1994
			LU 87977 A1	11-03-1992
			MA 21739 A1	01-10-1990
			MX 173567 B	16-03-1994
			NL 9020094 A	01-10-1991
			OA 9503 A	15-11-1992
			PT 92949 A , B	31-07-1990
			SE 9101815 A	13-06-1991
			WO 9008540 A1	09-08-1990
			ZA 9000245 A	31-10-1990
US 4792549	A	20-12-1988	JP 1942539 C	23-06-1995
			JP 6067831 B	31-08-1994
			JP 62164619 A	21-07-1987
			DE 3765784 D1	06-12-1990
			EP 0231768 A1	12-08-1987
WO 0234303	A	02-05-2002	US 6635273 B1	21-10-2003

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/014359

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 0234303	A	WO 0234303 A1	02-05-2002
		AU 5939901 A	06-05-2002
		CA 2421885 A1	02-05-2002
		EP 1337283 A1	27-08-2003
		JP 2004521083 T	15-07-2004
		US 2004005306 A1	08-01-2004
		US 2004071766 A1	15-04-2004
		US 2004081642 A1	29-04-2004
		US 2004105850 A1	03-06-2004
		AU 780261 B2	10-03-2005
		AU 1439301 A	30-05-2001
		CA 2386954 A1	25-05-2001
		EP 1244455 A1	02-10-2002
		JP 2003514020 T	15-04-2003
US 2002137785	A1	26-09-2002	NONE
US 6060446	A	09-05-2000	US 5576287 A 19-11-1996
			AU 2265095 A 29-11-1995
			CA 2189070 A1 09-11-1995
			EP 0758234 A1 19-02-1997
			JP 9512552 T 16-12-1997
			WO 9529675 A1 09-11-1995
JP 3204814	A	06-09-1991	JP 2534139 B2 11-09-1996
DE 3414491	A1	24-10-1985	NONE
JP 2212424	A	23-08-1990	NONE
US 6627659	B1	30-09-2003	IT MI990831 A1 23-10-2000
			AU 771390 B2 18-03-2004
			AU 4401200 A 10-11-2000
			BR 0009875 A 09-04-2002
			CA 2369942 A1 02-11-2000
			EP 1171112 A2 16-01-2002
			JP 2002542279 T 10-12-2002
			NZ 514911 A 26-03-2004
			WO 0064421 A2 02-11-2000
			HU 0200861 A2 29-07-2002
			US 2003139472 A1 24-07-2003
WO 0053176	A	14-09-2000	IT MI990460 A1 05-09-2000
			AU 2915900 A 28-09-2000
			WO 0053176 A1 14-09-2000
			EP 1156802 A1 28-11-2001
WO 0044375	A	03-08-2000	AU 766335 B2 16-10-2003
			AU 2304200 A 18-08-2000
			AU 2004200161 A1 12-02-2004
			BR 0007862 A 23-10-2001
			CA 2360680 A1 03-08-2000
			CN 1342073 A 27-03-2002
			EP 1146870 A1 24-10-2001
			WO 0044375 A1 03-08-2000
			GB 2366179 A ,B 06-03-2002
			GB 2380130 A ,B 02-04-2003
			GB 2382974 A ,B 18-06-2003

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/014359

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0044375	A		HU 0200075 A2	29-05-2002
			JP 2002535364 T	22-10-2002
			MX PA01007661 A	02-07-2002
			NZ 513131 A	28-11-2003
			NZ 527924 A	28-01-2005
			PL 350187 A1	18-11-2002
			US 2004047898 A1	11-03-2004
			ZA 200106114 A	25-07-2002
EP 0958816	A	24-11-1999	DE 4343593 A1	22-06-1995
			AT 203669 T	15-08-2001
			CA 2138558 A1	22-06-1995
			DE 59409810 D1	06-09-2001
			DK 659408 T3	01-10-2001
			EP 0659408 A1	28-06-1995
			EP 0958816 A2	24-11-1999
			ES 2159539 T3	16-10-2001
			GR 3036943 T3	31-01-2002
			JP 7206676 A	08-08-1995
			PT 659408 T	28-12-2001
			US 6117899 A	12-09-2000
			US 5693664 A	02-12-1997
			US 6284787 B1	04-09-2001
			US 5948810 A	07-09-1999